

Name: Key Class: _____ Date: _____

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Rational Numbers Review Package

(Ch 2 Math 9)

Multiple Choice

Identify the choice that best completes the statement or answers the question.

1. Consider the following list of rational numbers. Which choice shows them in ascending order?

$$1\frac{2}{7}, -2\frac{1}{3}, 1\frac{13}{14}, 1\frac{23}{24}$$

(small to large)

- (A) $-2\frac{1}{3}, 1\frac{2}{7}, 1\frac{13}{14}, 1\frac{23}{24}$ (B) $1\frac{23}{24}, 1\frac{13}{14}, 1\frac{2}{7}, -2\frac{1}{3}$ (C) $1\frac{2}{7}, -2\frac{1}{3}, 1\frac{13}{14}, 1\frac{23}{24}$ (D) $1\frac{2}{7}, 1\frac{13}{14}, 1\frac{23}{24}, -2\frac{1}{3}$

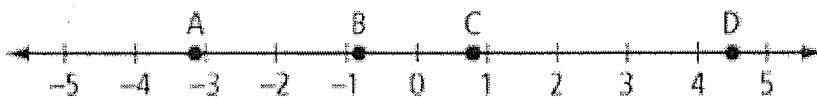
2. Which of the following sequences represents the numbers below written in descending order?

$$\frac{8}{13}, 0.7, 0.\bar{13}, \frac{7}{8}$$

(large to small)

- A) $0.\bar{13}, 0.7, \frac{7}{8}, \frac{8}{13}$ B) $\frac{8}{13}, \frac{7}{8}, 0.\bar{13}, 0.7$ C) $\frac{8}{13}, 0.7, \frac{7}{8}, 0.\bar{13}$ (D) $\frac{7}{8}, 0.7, \frac{8}{13}, 0.\bar{13}$

3. What rational number does the point B on the number line represent?



- A) -3.2 (B) -0.8 C) 0.8 D) 4.5

4. What fraction is equivalent to $\frac{5}{25}$?

- A) $\frac{6}{10}$ (B) $\frac{1}{5}$ C) $\frac{1}{6}$ D) $\frac{2}{15}$

5. Which rational number falls between $4\frac{5}{9}$ and $4\frac{5}{11}$?

- A) 4.4 (B) 4.5 C) 4.6 D) 4.7

6. Which decimal number is equivalent to $\frac{3}{8}$?

- A) 0.125 B) 0.250 (C) 0.375 D) 0.500

7. Calculate the value of $-15.8 \div 7.9$.

- (A) 7.9 (B) 2 (C) -2 D) -7.9

8. One day, the temperature fell from 3.5°C to -5.2°C in 3 hours. What was the temperature change per hour?

- A) -5.2°C/h (B) -2.9°C/h C) 0.57°C/h D) 3.5°C/h

9. The waiters at a restaurant give 30% of their tips to the kitchen staff at the end of each shift. If a waiter collects \$42.50 in tips, how much does he take home at the end of his shift?

- A) \$42.20 B) \$39.50 (C) \$29.75 D) \$12.75

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10. Mountain climbers must prepare for cold temperatures as they approach the top of a mountain. The air temperature drops 6°C for every 1000 m climbed. The height of Mount Waddington in British Columbia is 4016 m. If the temperature at the bottom of Mount Waddington is 13°C , what is the temperature, to the nearest degree, at the top of the mountain?

A) 25°C B) 13°C (C) -11°C D) -24°C

$$6 \times 4 = 24, \quad 13 - 24 = -11$$

11. What is $\frac{20}{27} \div \frac{5}{9}$?

A) $\frac{3}{2}$ (B) $\frac{4}{3}$ C) $\frac{3}{4}$ D) $\frac{2}{3}$

$$\frac{20}{27} \times \frac{9}{5} = \frac{4}{3}$$

12. Calculate $\frac{36}{24} \times \frac{3}{2} = \frac{3}{2}$

A) $\frac{3}{19}$ B) $\frac{3}{14}$ (C) $\frac{3}{7}$ D) $\frac{1}{3}$

13. Evaluate $\frac{4}{9} + \frac{1}{6} \times \frac{2}{3} = \frac{4}{9} + \frac{1}{9} = \frac{5}{9}$

(A) $\frac{5}{9}$ B) $\frac{11}{18}$ C) $\frac{7}{9}$ D) $\frac{5}{6}$

14. What is $\left(\frac{6}{7} - \frac{1}{2}\right) \times \frac{14}{15} = \left(\frac{12}{14} - \frac{7}{14}\right) \times \frac{14}{15} = \frac{5}{14} \times \frac{14}{15} = \frac{1}{3}$

(A) $\frac{1}{3}$ B) $\frac{3}{5}$ C) $\frac{14}{15}$ D) $\frac{45}{15}$

15. What is the result of $\frac{1}{9} + \frac{1}{4} + \frac{7}{12} = \frac{4}{36} + \frac{9}{36} + \frac{21}{36} = \frac{34}{36} = \frac{17}{18}$

(A) $\frac{17}{18}$ B) $\frac{11}{12}$ C) $\frac{8}{9}$ D) $\frac{31}{36}$

16. Evaluate $\frac{3}{4} - \frac{1}{5} - \frac{3}{10} = \frac{15}{20} - \frac{4}{20} - \frac{6}{20} = \frac{5}{20} = \frac{1}{4}$

A) $\frac{1}{5}$ (B) $\frac{1}{4}$ C) $\frac{3}{10}$ D) $\frac{7}{20}$

17. Jag has 4 large bags of popcorn, which he divides among some smaller bags. The smaller bags are $\frac{2}{3}$ of the size of the large bags. How many smaller bags of popcorn can Jag make?

A) 4 (B) 6 C) 8 D) 12

$$4 \div \frac{2}{3} = 24 \times \frac{3}{2} = 6$$

18. Which of these numbers is a perfect square?

A) 68 B) 92 C) 186 (D) 225 = 15^2

19. What is the area of a square with a side length of 8 units?

A) 32 units B) 32 square units C) 64 units (D) 64 square units

20. Which expression represents the area of a square with a side length of 2.52?

A) 2.52×4 B) 2.52×2 (C) 2.52×2.52 D) $2.52 \times 2.52 \times 2.52 \times 2.52$

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21. In professional baseball, the first base is a square with an area of 1444 cm^2 . What is the length of one side of the base?

A) 722 cm B) 361 cm C) 38 cm D) 12 cm

$$\sqrt{1444}$$

$$40^2 = 1600$$

Matching

Match the correct term to each of the following descriptions. A term may be used more than once or not at all.

- | | |
|--------------------|-----------------------|
| A) square root | D) non-perfect square |
| B) rational number | E) mixed number |
| C) perfect square | F) improper fraction |

22. a number of the form $\frac{a}{b}$, where a and b are integers and $b \neq 0$ B) rational
23. a rational number that cannot be expressed as the product of two equal rational factors D) non-perfect square
24. a fraction such as $\frac{11}{3}$ F) improper fraction
25. a factor that multiplies by itself to give that number C) perfect square
26. a fraction such as $3\frac{2}{3}$ E) mixed #

Match each numerical solution to the appropriate expression. A solution may be used more than once or not at all.

- | | |
|---------|---------|
| A) -6.6 | D) 2.53 |
| B) 1.4 | E) 53.3 |
| C) 2.6 | F) -8.4 |

27. A rational number equivalent to $2\frac{3}{5} = \frac{13}{5} = 2.6 = \text{C}$
28. $3.5 \times (-2.4) = -8.4 = \text{F}$
29. $-6.1 - (1.5 \div 3) = -6.1 - 0.5 = -6.6 = \text{A}$
30. $(9.6 + 3.4) \times (8.2 \div 2) = 13 \times 4.1 = 53.3 = \text{E}$
31. $\sqrt{1.96} = 1.4 = \text{B}$

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Short Answer

32. Evaluate each expression. Write your answer in lowest terms.

a) $2\frac{1}{4} \times 3\frac{1}{3}$

$$= \frac{39}{4} \times \frac{10}{3}$$

$$= \frac{15}{2}$$

$$= 7\frac{1}{2}$$

b) $-1\frac{3}{4} + 2\frac{1}{6}$

$$= -\frac{7}{4} + \frac{13}{6}$$

$$= -\frac{21}{12} + \frac{26}{12}$$

$$= \frac{5}{12}$$

c) $\frac{2}{5} \div 1\frac{1}{15}$

$$= \frac{2}{5} \times \frac{15}{16}$$

$$= \frac{3}{8}$$

Problem

33. Bonnie drives 100 km in 60 min. Laurie drives the same distance, but takes 5 min longer than Bonnie.

a) Who is driving faster? *Bonnie is faster*

b) How much faster is she driving? Give your answer in km/h, rounded to the nearest hundredth.

$$\frac{100\text{ km}}{60\text{ min}} - \frac{100\text{ km}}{65\text{ min}}$$

$$= \frac{5}{3} - \frac{20}{13}$$

$$= \frac{65}{39} - \frac{60}{39} = \frac{5}{39} = 0.1282 \text{ km/min.}$$

calculator
↓

$$0.1282 \text{ km/min} \times 60 \text{ min/hr}$$

$$= 7.69 \text{ km/hr}$$

34. Replace each \square with $>$, $<$, or $=$ to make each statement true.

a) $\frac{2}{3} \square 0.6$

b) $\frac{1}{4} \square 0.25$

c) $1.52 \square 1\frac{1}{2}$

d) $\frac{3}{4} \square 0.75$

e) $-0.9 \square -\frac{9}{11}$

f) $0.954 \square 0.946$

$$-\frac{9}{10} < -\frac{9}{11}$$

↑
more
negative
is smaller